



CTSO Course Alignments: Introduction to Agricultural Sciences

Below you will find standards for the Introduction to Agricultural Sciences course aligned with competitive events from appropriate career and technical student organizations (CTSOs). Knowing the aligned events for your organization will allow you to have additional tools for teaching course standards, as well as increase student engagement and preparation in your CTSO activities. The final column recommends potential tools from other CTSO organizations. Even if your students are not participating in these organizations, available rubrics, tools, and materials can also add to the instructional resources at your disposal for best teaching your content.

Important to note: While the aligned activities below can be important tools in teaching course standards, it is important to note that events may not cover a standard in its entirety and should not be the sole instructional strategy used to address a standard.

	STANDARD	ALIGNED FFA COMPETITIVE EVENTS/PROGRAMS	OTHER POTENTIAL CTSO TOOLS & RESOURCES
1	Create an accurate summary of the importance of agriculture in daily life. Identify sources of different types of food and fiber products and depict them in a visual representation. (TN Reading 2; TN Writing 8)	<ul style="list-style-type: none"> • FFA Creed 	<ul style="list-style-type: none"> • FCCLA: Advocacy
2	Review common laboratory safety procedures for tool and equipment operation in the agricultural and biosystems engineering laboratories, including but not limited to accident prevention and control procedures. Demonstrate the ability to follow safety and operational procedures in a lab setting and complete a safety test with 100 percent accuracy. (TN Reading 3; ARNR CS)	<ul style="list-style-type: none"> • FFA: Agriscience Fair, FFA Ceremonies, FFA Creed 	<ul style="list-style-type: none"> • HOSA: Biomedical Laboratory Science • SkillsUSA: Occupational Health and Safety
3	Explore local career opportunities in agriculture and examine the importance of the agriculture industry to Tennessee's economy. Use local job postings and Tennessee labor and workforce data.	<ul style="list-style-type: none"> • FFA: Job Interview 	<ul style="list-style-type: none"> • FCCLA: Job Interview, Career Investigation, Entrepreneurship • HOSA: Job Seeking Skills • SkillsUSA: Job Interview, Entrepreneurship, Employment Application Process • TSA: Career Preparation

4	Draw evidence from informational and technical texts to evaluate the role of scientific investigation in the agriculture industry. Design and conduct an Agriscience Fair project using the scientific investigation process. (TN Writing 2, 4, 6, 7, 8, 9)	<ul style="list-style-type: none"> • FFA: Agriscience Fair 	
5	Demonstrate in a live setting or in a presentation the ability to follow procedures precisely, attending to special cases or exceptions noted in appropriate materials, to safely utilize agricultural lab equipment. Demonstrate ability to pass a safety test at 100 percent accuracy on all lab equipment. (TN Reading 3)		
6	Identify types of agribusiness and explore the different roles of local and regional career opportunities in agribusiness. Use local job postings and Tennessee labor and workforce data.	<ul style="list-style-type: none"> • FFA: Agricultural Communications, Agricultural Sales, Job Interview, Marketing Plan 	<ul style="list-style-type: none"> • FCCLA: Job Interview, Career Investigation, Entrepreneurship • HOSA: Job Seeking Skills • SkillsUSA: Job Interview, Entrepreneurship, Employment Application Process • TSA: Career Preparation
7	Develop a list summarizing fundamental agribusiness skills, including but not limited to: <ul style="list-style-type: none"> a. Leadership roles b. Types of organizational structures c. Importance of teamwork d. Roles of communication e. Principles of recordkeeping f. Basic public speaking skills 	<ul style="list-style-type: none"> • FFA: Agricultural Communications, Agricultural Sales, Job Interview, Marketing Plan 	<ul style="list-style-type: none"> • FCCLA: Job Interview, Career Investigation, Entrepreneurship, Interpersonal Communications • SkillsUSA: Job Interview, Entrepreneurship, Employment Application Process
8	Examine the impact of the agricultural mechanics industry on United States society and the economy at large, addressing technological developments and career options. Produce an informational essay or model (such as a timeline, graphic illustration, or presentation) to illustrate findings. (TN Reading 1, 2; TN Writing 4, 9)	<ul style="list-style-type: none"> • FFA: Agricultural Technology and Maintenance 	<ul style="list-style-type: none"> • FCCLA: Job Interview, Career Investigation, Entrepreneurship • HOSA: Researched Persuasive Speaking • SkillsUSA: Job Interview, Entrepreneurship, Employment Application Process • TSA: Desktop Publishing, Promotional Graphics, Digital Video Production

9	<p>Demonstrate conceptual understanding of the following current practices in agricultural mechanics:</p> <ol style="list-style-type: none"> Calculate horsepower and explain its importance and uses Explain the different types of power units Explain the functions of basic hand and power tools Demonstrate the safe use and maintenance of basic hand and power tools, including passing a safety test at 100 percent accuracy Describe common building methods and materials used in the agricultural industry Appropriately apply unit conversions and calculate acreage, length, and volumes (TN Reading 3) 	<ul style="list-style-type: none"> • FFA: Agricultural Technology and Maintenance 	
10	<p>Investigate local and regional career opportunities in animal science, drawing on information from multiple print and digital resources such as local job postings and Tennessee labor and workforce data.* (TN Reading 8)</p>	<ul style="list-style-type: none"> • FFA: Job Interview, Veterinary Science 	<ul style="list-style-type: none"> • FCCLA: Job Interview, Career Investigation, Entrepreneurship • HOSA: Job Seeking Skills, Veterinary Science • SkillsUSA: Job Interview, Entrepreneurship, Employment Application Process • TSA: Career Preparation
11	<p>Compare and contrast small companion and large domesticated animals, synthesizing informational texts, graphic illustrations, and models to describe the following:</p> <ol style="list-style-type: none"> Their historical and contemporary roles in society and the agriculture industry specifically The social and economic implications for maintaining animal health Common domesticated breeds and their uses in society <p>(TN Reading 1, 9; TN Writing 2, 9)</p>	<ul style="list-style-type: none"> • FFA: Veterinary Science 	<ul style="list-style-type: none"> • HOSA: Veterinary Science
12	<p>Review illustrative models of major animal body systems (skeletal, muscular, respiratory, digestive, nervous, integumentary, urinary, reproductive) in conjunction with technical information from scientific texts to establish a basic knowledge of animal anatomy and physiology. (TN Reading 5; TN Writing 9)</p>	<ul style="list-style-type: none"> • FFA: Veterinary Science 	<ul style="list-style-type: none"> • HOSA: Veterinary Science
13	<p>Compare and contrast information gathered from a variety of sources to identify local and regional career opportunities in environmental and natural resources systems. Use local job postings and Tennessee labor and workforce data.</p>	<ul style="list-style-type: none"> • FFA: Environmental and Natural Resources, Job Interview 	<ul style="list-style-type: none"> • FCCLA: Job Interview, Career Investigation, Entrepreneurship • HOSA: Researched Persuasive Speaking • SkillsUSA: Job Interview, Entrepreneurship, Employment Application Process • TSA: Essays on Technology

14	Draw conclusions about the interrelationships among plants and animals, citing specific textual evidence to justify conclusions. Identify native wildlife species and describe their environmental and economic impacts in Tennessee, incorporating visual representations such as diagrams or models. (TN Reading 1; TN Science Grade 7: 2, 5; TN Science Grade 8: 2, 5)	<ul style="list-style-type: none"> • FFA: Agriscience Fair, Environmental and Natural Resources 	
15	Explore the basic principles of soil science by analyzing soil structure and formations. Write recommendations for basic methods of soil conservation, citing evidence from news articles, academic journals or agriculture texts. (TN Reading 1, 2; TN Writing 4, 9)	<ul style="list-style-type: none"> • FFA: Agriscience Fair, Land Evaluation 	<ul style="list-style-type: none"> • HOSA: Researched Persuasive Speaking • TSA: Essays on Technology
16	Analyze visual representations (charts, diagrams, tables) to summarize important connections and distinctions concerning the flow of energy in ecosystems. (TN Writing 2; TN Science Grade 7: 3, 7; TN Science Grade 8: 3, 7)	<ul style="list-style-type: none"> • FFA: Agriscience Fair 	
17	Identify the types of pollution found in air and water. Citing evidence from academic journals and news articles, determine pollution sources and the general effects of pollutants on the environment. (TN Reading 1, 2)	<ul style="list-style-type: none"> • FFA: Agriscience Fair, Environmental and Natural Resources 	<ul style="list-style-type: none"> • FCCLA: Advocacy, Environmental Ambassador • HOSA: Public Health, Community Awareness, Public Service Announcement • TSA: Digital Video Production
18	Compare and contrast information gathered from a variety of sources to identify local and regional career opportunities in horticulture using local job postings and Tennessee labor and workforce data. (TN Reading 8)	<ul style="list-style-type: none"> • FFA: Floriculture, Job Interview 	<ul style="list-style-type: none"> • FCCLA: Job Interview, Career Investigation, Entrepreneurship • HOSA: Job Seeking Skills • SkillsUSA: Job Interview, Entrepreneurship, Employment Application process • TSA: Career Preparation
19	Examine illustrative models of plants to differentiate basic plant structures. Describe how form and function of structures are related. Explain components and processes involved in plant reproduction and growth. (TN Reading 2; TN Science Grade 7: 2; TN Science Grade 8: 2)	<ul style="list-style-type: none"> • FFA: Floriculture, Environmental and Natural Resources, Nursery and Landscape 	
20	Analyze the relationship between soil quality and plant health and growth, including impact of pH, organic matter content, and mineral content. (TN Reading 2; TN Science Grade 7: 2)	<ul style="list-style-type: none"> • FFA: Environmental and Natural Resources, Land Evaluation 	
21	Describe the general characteristics of common plants used in food production, greenhouse, landscaping, and turf grass applications.	<ul style="list-style-type: none"> • FFA: Nursery and Landscape 	

22	Explore basic concepts of sustainable agriculture by researching general principles of aquaculture and hydroponics. Citing relevant research, write an informative essay detailing sustainable practices in aquaculture and hydroponics and their contributions to society. (TN Reading 2; TN Writing 2, 7)	<ul style="list-style-type: none"> • FFA: Agriscience Fair 	
ALL	CAN BE USED WITH ALL/MOST STANDARDS	<ul style="list-style-type: none"> • FFA: Agriscience Fair Extemporaneous Public Speaking, Ceremonies, Creed, Prepared Public Speaking 	<ul style="list-style-type: none"> • FBLA: Agribusiness • FCCLA: Illustrated Talk, Chapter in Review Display, Chapter in Review Portfolio • HOSA: Prepared Speaking, Extemporaneous Speaking, Extemporaneous Writing • SkillsUSA: Career Pathways Showcase, Job Skills Demonstration A, Job Skills Demonstration O, Prepared Speech, Extemporaneous Speaking, Chapter Display • TSA: Prepared Presentation, Extemporaneous Presentation